

We care with Comfortable Technology



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ComfTech srl

Benefit Corporation

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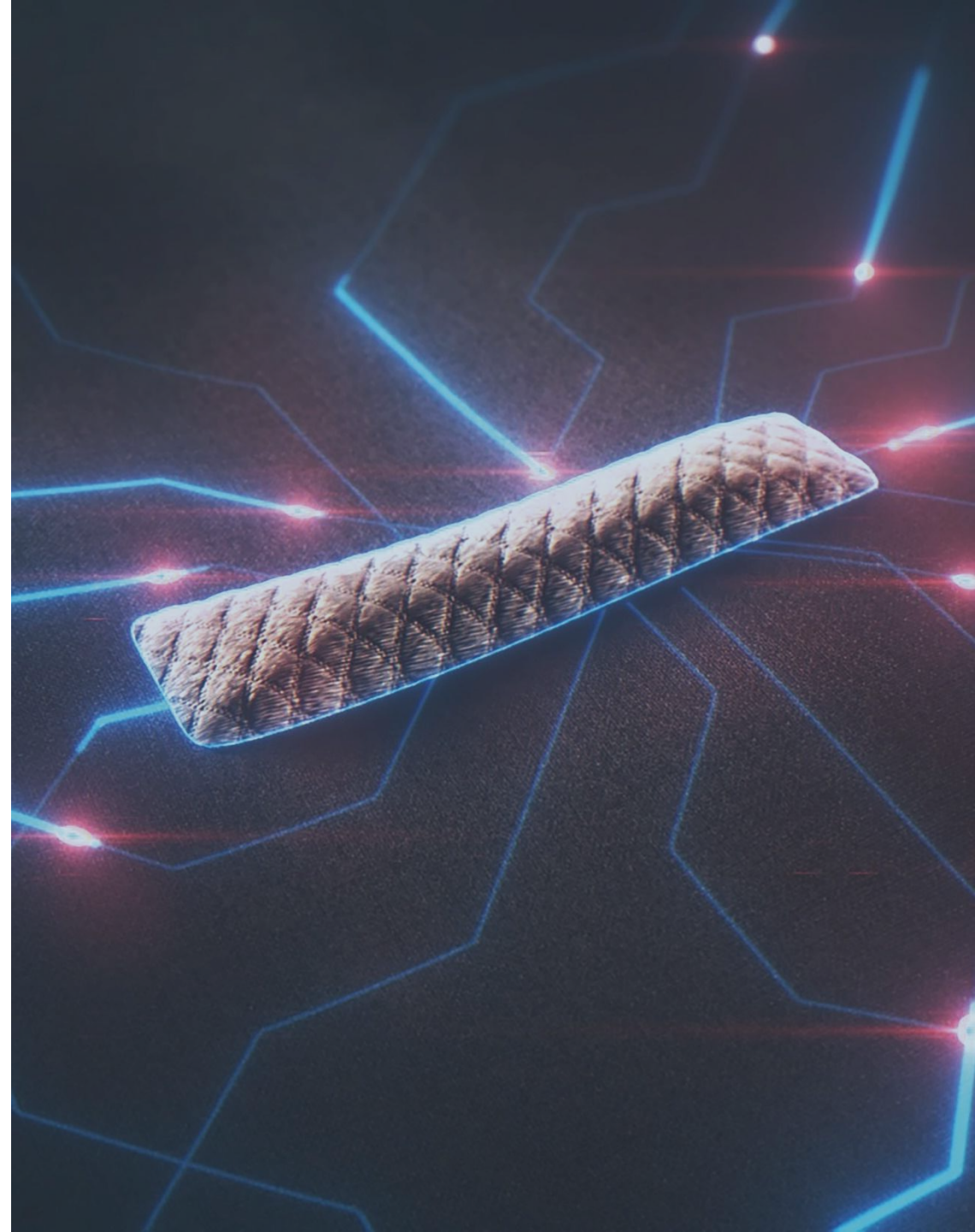
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ComfTech

ComfTech is an Italian company specializing in the design and production of **wearable monitoring systems** based on an innovative **textile sensors** technology fully integrated into smart garments, classified as **medical devices**.

These systems allow to **collect unique health data** from patients in a comfortable way.

- ComfTech is a **Benefit Corporation**
- Our products are **designed and manufactured in Italy**
- ComfTech has obtained CE certification according to the **MDR regulation**.
Our products are **class IIb and class I medical devices**



Our vision

Enabling **anyone, anywhere, at any time** to monitor their **vital parameters** for **prevention, prediction** and **treatment support** purposes.

Our mission

Offering systems that **integrate unobtrusively** into **people's daily lives**, for continuous, non-invasive **monitoring of vital parameters**.



From newborns to the elderly

Our company was founded as a project to improve the quality of life of premature babies in neonatal intensive care.

Today, our products have a **wide range of applications** and are designed for **all ages**.

We have developed **algorithms optimized** to adapt to **different age groups** and cover **different areas**:



HOWDY baby

- Neonatology
- Pediatrics



HOWDY senior

- Monitoring in the facility and at home
- Physical rehabilitation
- Respiratory rehabilitation
- Athletic training

The advantages of sensorized clothing



Patented
Intellectual
Property

ComfTech textile sensors are patented, safe, and efficient:

- **HIGH SIGNAL QUALITY**
- **SOFT AND FLEXIBLE**
- **HYPOALLERGENIC**
- **COMFORTABLE**

- They do not hinder movement and do **not interfere** with activities.
- The sensors **do not need to be placed** on the body, as they are integrated into the garment.
- **They reduce the perception of medical devices**
- They enable **continuous, non-invasive monitoring**.
- They feature **tested** textile sensors and circuits.

HOWDY senior

Wearable monitoring system
for adults

Daily monitoring
Physical rehabilitation
Breathing exercises



HOWDY senior

Howdy Senior is a wearable monitoring device for adults that **continuously and non-invasively detects cardiac, respiratory and motor parameters.**




Howdy Senior is a **safe and comfortable** product that allows monitoring without interfering with normal daily activities.

Device + App:
Class IIb medical device




Textile unit:
Class I medical device



CARDIAC PARAMETERS

-  Heart Rate
-  Real-time ECG trace
-  HRV analysis



RESPIRATORY PARAMETERS

-  Breathing Rate
-  Respiratory trace
-  Biofeedback breathing exercises

MOTION PARAMETERS

-  Body position
-  Gait analysis
-  Postural analysis
Romberg test

INTEGRATED PARAMETERS

-  Oxygen saturation
-  Body temperature

App Howdy

HOWDY
senior

FEATURES

- Real-time parameters display
- Monitoring **report** generation
- Data sent to **WebApp** for data consultation, both on the patient side and on the operator side
- Data sent to **Central Monitor**



App

Howdy app - Report

20/01/2023 12:23

Paziente monitorato: Paziente
Operatore: Operatore

Inizio monitoraggio: 18/01/2023 12:19:00
Fine monitoraggio: 20/01/2023 12:22:54
Durata monitoraggio: 48 Ore 3 Minuti 54 s
Dispositivo: HOWDY SENIOR (v. 2.0.58)
(B4:DF:DA:45:D7:C8)
Versione App: 1.1.0

Note:

Statistica Generale

Howdy Senior (B4:DF:DA:45:D7:C8)

QRS totali	23995
Frequenza cardiaca massima (bpm)	196 (19/01/2023 12:16)
Frequenza cardiaca minima (bpm)	35 (18/01/2023 23:46)
Frequenza cardiaca media (bpm)	52
Battiti sotto soglia (FC < 30 bpm)	0
Battiti sopra soglia (FC > 120 bpm)	22
Valori non validi*	9866
Atti respiratori totali	15591
Frequenza respiratoria massima (rpm)	49 (18/01/2023 19:08)
Frequenza respiratoria minima (rpm)	0 (18/01/2023 19:56)
Frequenza respiratoria media (rpm)	25
Respiri sotto soglia (FR < 4 rpm)	80
Respiri sopra soglia (FR > 50 rpm)	0
Valori non validi**	0
Tempo in pos. supina (h:m:s)	06:22:39 - 32,8 % del tempo totale
Tempo in pos. prona (h:m:s)	00:18:36 - 1,6 % del tempo totale
Tempo in pos. verticale (h:m:s)	20:19:29 - 53,2 % del tempo totale
Tempo in pos. capovolta (h:m:s)	00:05:26 - 0,5 % del tempo totale
Tempo in pos. lato destro (h:m:s)	02:17:22 - 11,8 % del tempo totale
Tempo in pos. lato sinistro (h:m:s)	00:03:21 - 0,1 % del tempo totale
Cambio di Posizione totali	70

* Valori non validi derivano da misurazioni errate o da interferenze e quei valori che si discostano significativamente dal valore medio del segnale. Sono principalmente riscontrabili a tutti i livelli di condizione di segnale rumoroso.
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PDF

Report



Webapp

App Howdy + Rehab

TEST

Gait analysis includes:

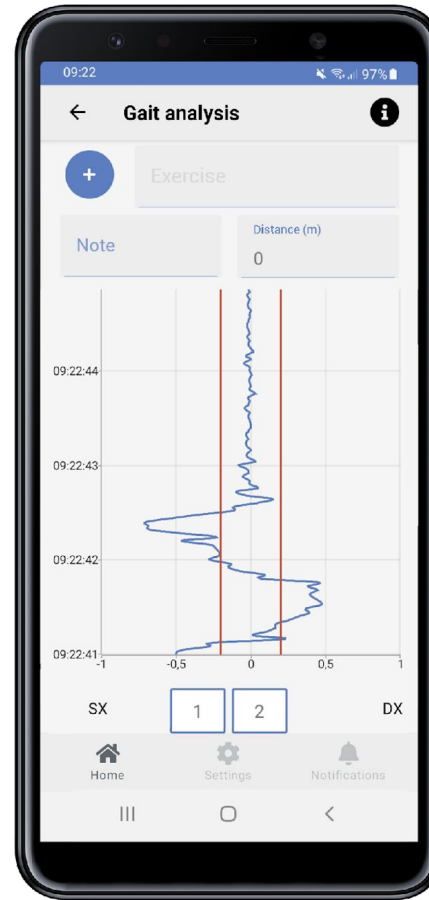
- 10-meter walk test (10MWT)
- 6-minute walk test (6MWT)
- Free walking test
- Timed Up and Go test (TUG)

Postural analysis includes:

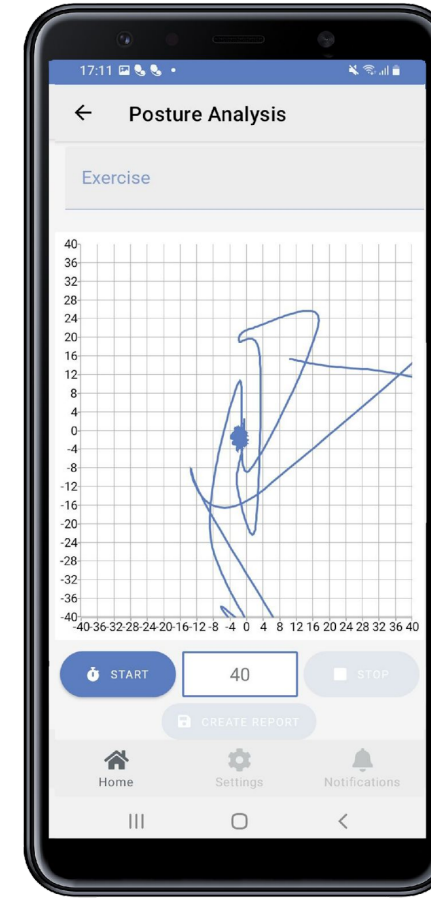
- Bipedal test
- Right leg monopodal test
- Left leg monopodal test

Romberg test

The data is sent to the WebApp for consultation, both on the patient side and on the operator side.



Gait analysis



Postural analysis



Romberg Test

* Scoppa F, Gellamini M, Belloni O (2016) Treating Balance Disorders with Ullt: Acupuncture Stimulation: A Further Pilot Study on Normal Subjects Confirms Clinical Applicability of Treatment. J Nov Physiother 6: 285. doi:10.4172/2165-7025.1005285

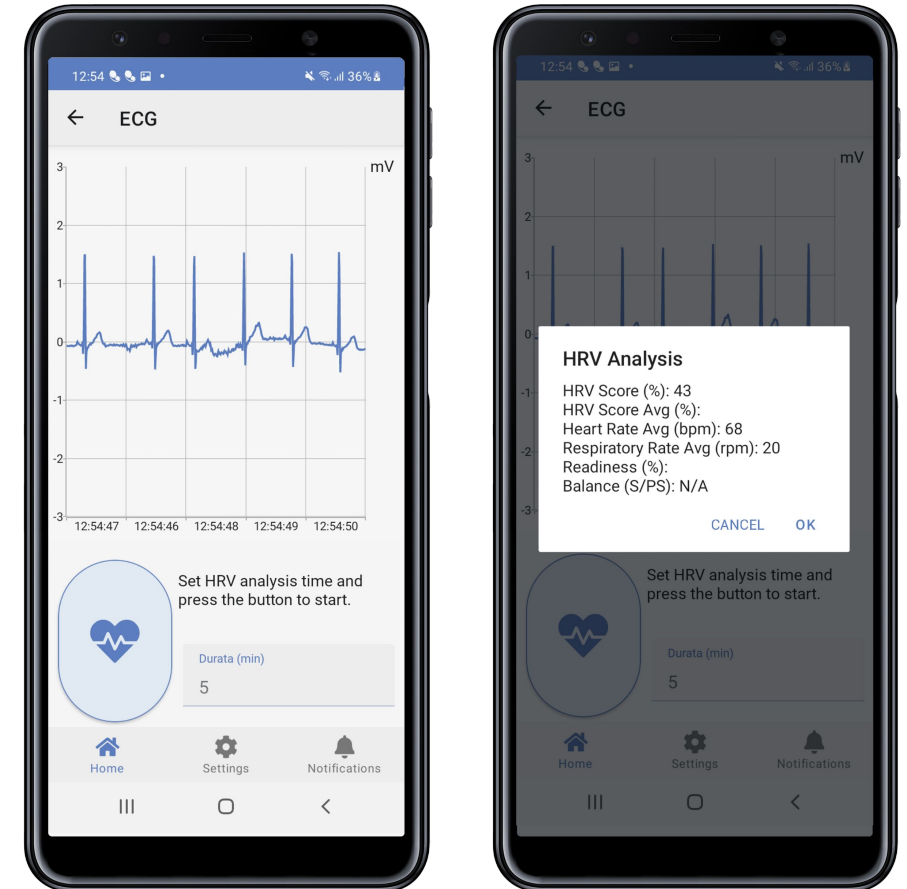
App Howdy + HRV

HRV ON DEMAND

Calculated at the user's request, displayed in the App and WebApp

- **HRV Score**
- **Average HRV Score for the previous 10 days**
- **Average heart rate**
- **Average respiratory rate**
- **Readiness Index** indicates readiness for a new training activity
- **Balance** indicates a state of stress or recovery, based on the prevalence of the sympathetic or parasympathetic nervous system compared to previous days

The average HRV Score, Readiness Index, and Balance are calculated if there are at least 4 HRV Score measurements in the previous 10 days.



App Howdy + HRV

HRV CONTINUOUS

- **HRV Score**
- **Stress Index** to assess stress caused by internal and external factors
- **HF band power** indicator of parasympathetic nervous system activation/deactivation

NIGHT HRV

- **Nighttime HF power average** indicator of parasympathetic nervous system activation/deactivation during the night

Calculated automatically every 15 minutes, displayed in WebApp

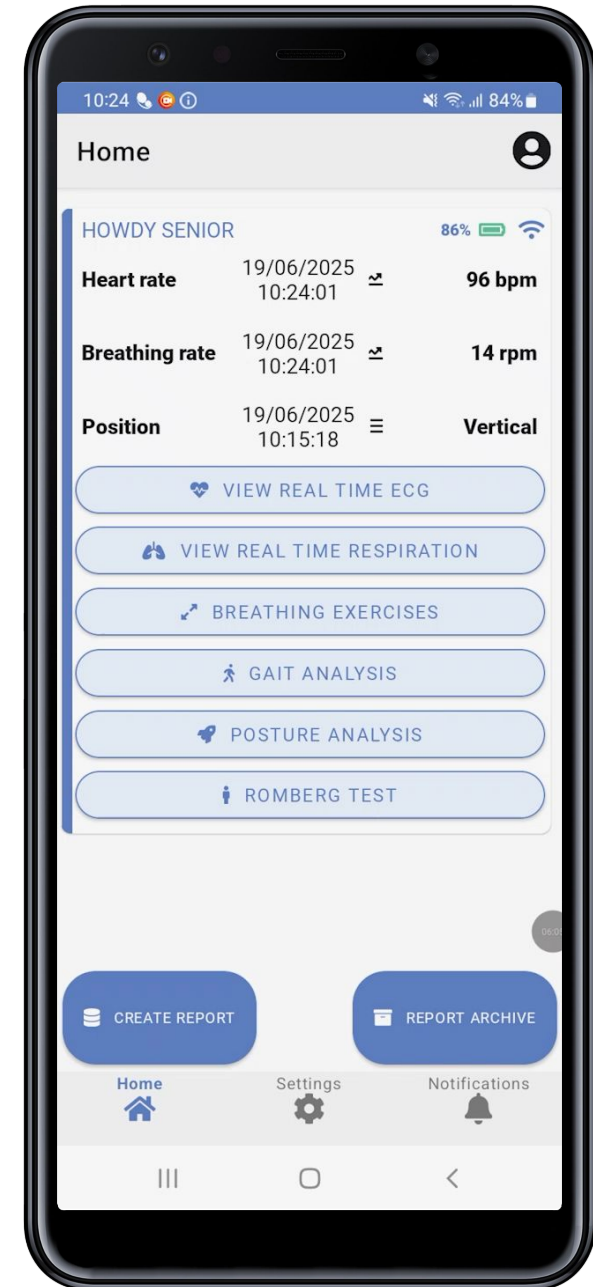


App Howdy + Breathing exercises

BREATHING EXERCISES WITH BIOFEEDBACK

- Exercise sessions set up by the therapist
- Option for patients to perform them independently
- Session report generation

HOWDY
senior



Web App

Access to WebApp, with Admin account, for consultation and data download.

- **Users sorted by ID**
- Heart rate, respiratory rate, movement index, steps taken by each user
- ECG and tachogram for each user
- Respiratory signal
- Accelerations
- Cardiac variability indices
- Rehabilitation section

Comf

Tech

Admin ComfTech

ComfTech

AC

Logout

Utenti

Userld	Email	Nome Utente	Ultimo Login	Dettagli
1	user1@mail.com	Utente Uno	2024-02-09, 17:06:01	Vai alla Dashboard
2	user2@mail.com	Utente Due	2024-02-09, 16:15:28	Vai alla Dashboard
3	user3@mail.com	Utente Tre	2024-02-09, 08:00:32	Vai alla Dashboard
4	user4@mail.com	Utente Quattro	2024-02-08, 18:24:40	Vai alla Dashboard
5	user5@mail.com	Utente Cinque	2024-02-08, 12:24:34	Vai alla Dashboard
6	user6@mail.com	Utente Sei	2024-02-08, 10:54:04	Vai alla Dashboard
7	user7@mail.com	Utente Sette	2024-02-08, 08:35:09	Vai alla Dashboard
8	user8@mail.com	Utente Otto	2024-02-08, 07:15:48	Vai alla Dashboard
9	user9@mail.com	Utente Nove	2024-02-07, 20:23:27	Vai alla Dashboard
10	user10@mail.com	Utente Dieci	2024-02-07, 17:38:20	Vai alla Dashboard
11	user11@mail.com	Utente undici	2024-02-07, 12:56:47	Vai alla Dashboard
12	user12@mail.com	Utente Dodici	2024-02-07, 07:59:20	Vai alla Dashboard

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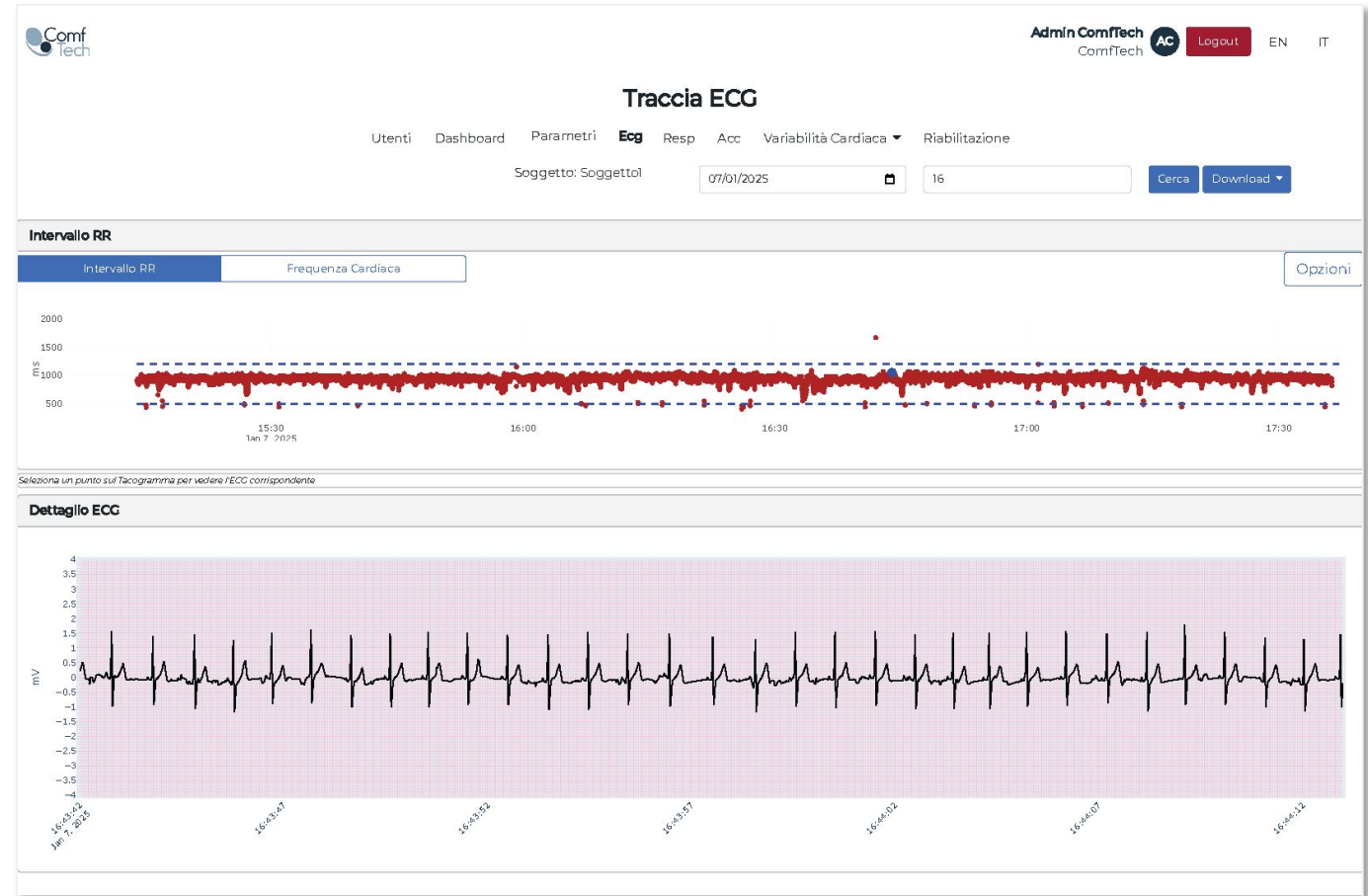
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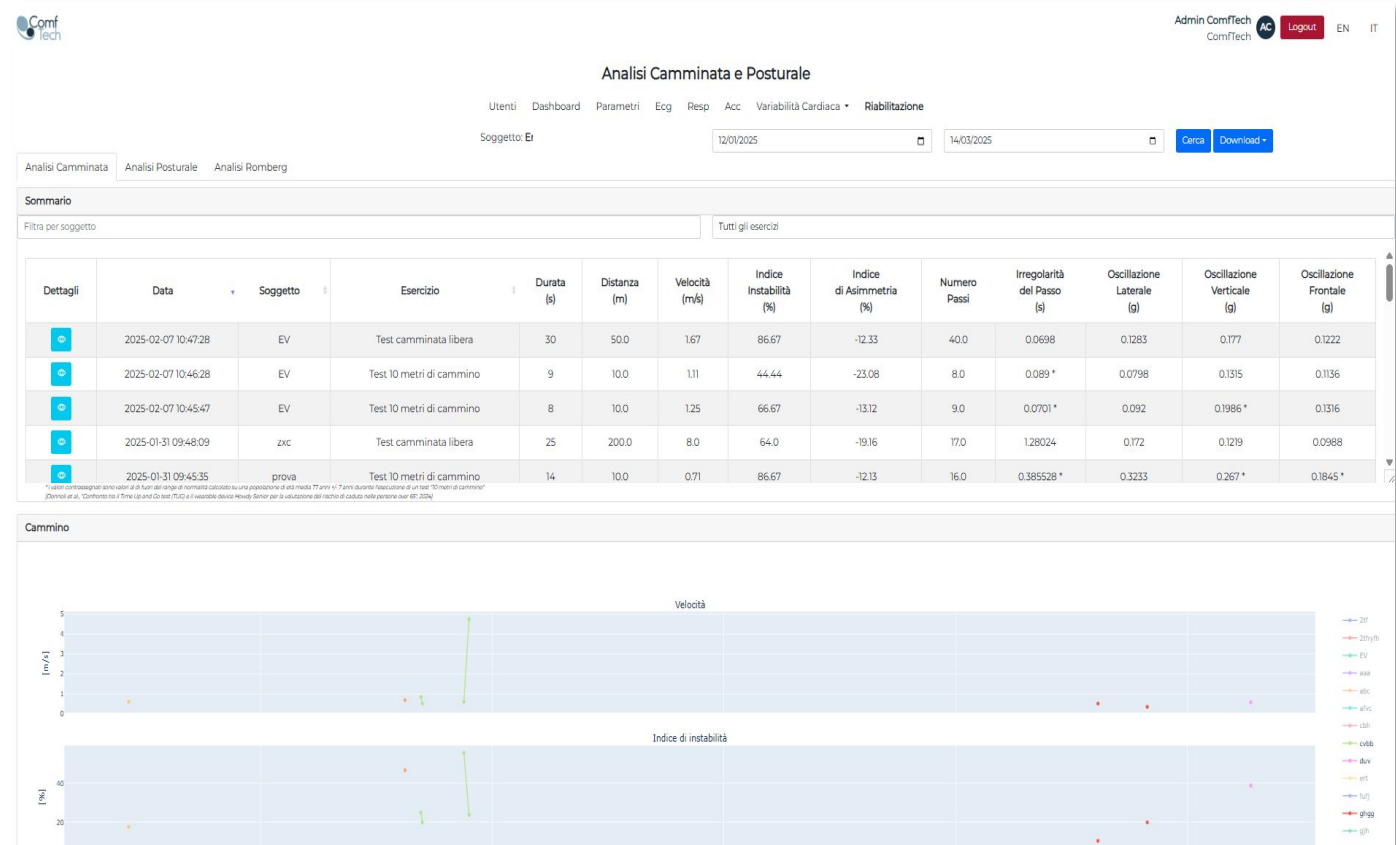
- Users sorted by ID
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- Accelerations
- **Cardiac variability indices**
- Rehabilitation section



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- Cardiac variability indices
- **Rehabilitation section** divided into Gait Analysis, Postural Analysis, and Romberg Analysis, it reports the details of the tests performed in the app.



Rehabilitation Index description

Asymmetry index (%)

Lateral imbalance while walking: a value of 0 indicates perfect symmetry, 100 indicates complete tilt to the right, and -100 to the left

Lateral oscillation (g)

Standard deviation of mid-lateral acceleration; the higher the value, the greater the oscillation

Vertical oscillation (g)

Standard deviation of vertical acceleration; the higher the value, the greater the oscillation

Frontal oscillation (g)

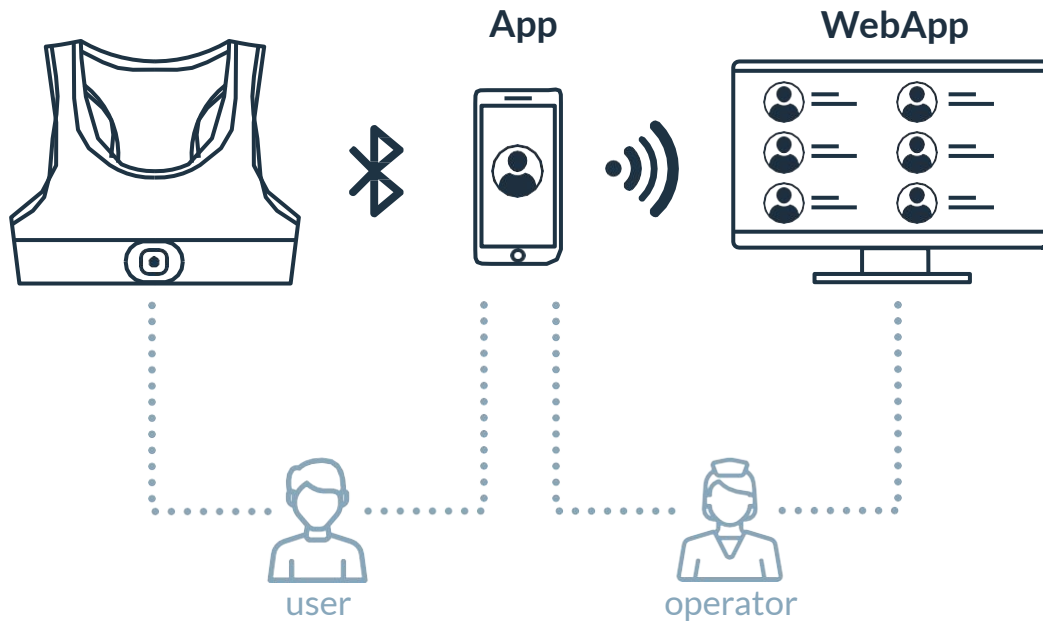
Standard deviation of anterior-posterior acceleration; the higher the value, the greater the oscillation

Step irregularity (s)

Standard deviation of the time between one step and the next: the higher this indicator, the more irregular the step rhythm during exercise

Distanza (m)	Velocità (m/s)	Indice Instabilità (%)	Indice di Asimmetria (%)	Numero Passi	Irregolarità del Passo (s)	Oscillazione Laterale (g)	Oscillazione Verticale (g)	Oscillazione Frontale (g)
50.0	1.67	86.67	-12.33	40.0	0.0698	0.1283	0.177	0.1222
10.0	1.11	44.44	-23.08	8.0	0.089 *	0.0798	0.1315	0.1136
10.0	1.25	66.67	-13.12	9.0	0.0701 *	0.092	0.1986 *	0.1316
200.0	8.0	64.0	-19.16	17.0	1.28024	0.172	0.1219	0.0988
10.0	0.71	86.67	-12.13	16.0	0.385528 *	0.3233	0.267 *	0.1845 *

Data flow




Casi d'uso


- RSA, protected apartments, and nursing homes
- Low- and medium-intensity care wards
- Rehabilitation and telerehabilitation
- Physical activity
- Hematology and transplant center
- Emergency room
- Home monitoring
- Prevention




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